

Please amend claim 2 to read as follows:

2. (Twice Amended)

A self-sustained pulsating laser diode

having a double-heterostructure comprising:

a first cladding layer of a first conductivity type;

a multi-quantum well active layer; and

a second cladding layer of a second conductivity type and both the first cladding layer and the second cladding layer being arranged on a

semiconductor substrate of the first conductivity type,

an effective refractive index difference parallel to the layers (Δn) being at least

7×10^{-4} and no greater than 3×10^{-3} , and a carrier density in

a flat part of said second cladding layer having a current blocking structure

being at least $1 \times 10^{17} \text{ cm}^{-3}$ and no greater than $5 \times 10^{17} \text{ cm}^{-3}$.

Please amend claim 9 to read as follows:

9. (Amended)

A self-sustained pulsating laser diode having

a double-heterostructure comprising:

a first cladding layer of a first conductivity type;

a multi-quantum well active layer; and

a second cladding layer of a second conductivity type and both the first cladding layer and the second cladding layer being arranged on a semiconductor substrate of the first conductivity type, the number of said quantum wells being at least 5; and

a layer thickness of a flat part of said second cladding layer having a current blocking structure being at least 300nm; and an effective refractive index difference parallel to the layers (Δn) being at least 7×10^{-4} and no greater than 3×10^{-3} .